

**BEST AVAILABLE COPY****COMPLETE LISTING OF CLAIMS:**

Claims 1-17 cancelled

18. (Previously presented) The system of claim 28, wherein the locations of said selected atypical cells are retrieved by said computer for DNA ploidy analysis on a cell by cell basis.

19. (Previously presented) The system of claim 18, wherein said system plots a histogram based of the DNA ploidy of said cell population.

21. Cancelled

22. Cancelled

23. (Previously presented) The system of claim 28, comprising the further examination of said selected atypical cells with molecular diagnostic techniques.

24. (Previously presented) The system of claim 28, wherein said cell population is retrieved from epithelial tissue, wherein said bristles removes cells from at least two layers of said epithelial tissue.

25. Cancelled

26. (Previously presented) The system of claim 24, wherein the location of said selected atypical cells are retrieved by said completer for DNA ploidy analysis by a pathologist on a cell by cell basis.

27. (Previously presented) The system of claim 24, comprising the further examination of said selected atypical cells with molecular diagnostic techniques.

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28. (Currently Amended) A system to detect precancerous and cancerous cells in a cell population, said cell population existing in epithelial tissue having an uppermost surface and tissue containing areas below said uppermost surface, said system comprising:

(a) brush means comprising bristles having sufficient stiffness to collect said cell population from said uppermost and said tissue containing areas below said uppermost surface,

(b) analytical apparatus comprising imaging apparatus for imaging said cell population,

(c) said imaging apparatus morphologically first selecting individual atypical cells from said cell population, and

(d) wherein said imaging apparatus comprises means to determine which of said individual selected atypical cells are the most atypical appearing cells from said cell population, and

(e) ~~(d)~~ means to conduct DNA ploidy quantization of said selected individual atypical cells after said atypical cells are selected.

29. Cancelled